

Title (en)

Ultrasonic distance sensor and robot cleaner using the same

Title (de)

Ultraschall-Distanzsensord und Reinigungsroboter damit

Title (fr)

Capteur de distance ultrasonique et robot nettoyeur l'utilisant

Publication

**EP 2045624 A1 20090408 (EN)**

Application

**EP 08159916 A 20080708**

Priority

- KR 20070098616 A 20071001
- KR 20080021870 A 20080310

Abstract (en)

Disclosed herein are an ultrasonic distance sensor that is capable of extending an ultrasonic wave transmitted from a wave transmitter to sense the distance between an object located in a wide region and an installation body having the sensor installed therein and a robot cleaner using the same. The ultrasonic distance sensor includes a wave transmitter to transmit an ultrasonic wave, an ultrasonic wave extender to extend the ultrasonic wave, and a wave receiver to receive the ultrasonic wave reflected from an object.

IPC 8 full level

**G01S 15/00** (2006.01)

CPC (source: EP US)

**G01S 7/521** (2013.01 - EP US); **G01S 15/003** (2013.01 - EP US); **G01S 15/876** (2013.01 - EP US); **G05D 1/0255** (2024.01 - EP US)

Citation (applicant)

- DE 3341022 A1 19850523 - GROLL HORST, et al
- US 5935179 A 19990810 - KLEINER MENDEL [SE], et al

Citation (search report)

- [XY] DE 3341022 A1 19850523 - GROLL HORST, et al
- [XY] US 5160927 A 19921103 - CHERRY JAMES R [US], et al
- [A] US 6289282 B1 20010911 - HASSLER GREGOR [DE], et al
- [Y] US 5935179 A 19990810 - KLEINER MENDEL [SE], et al
- [XY] GB 2305287 A 19970402 - PROTHORP DESIGN LTD [GB]
- [Y] US 2006217854 A1 20060928 - TAKENAKA HIROYUKI [JP], et al

Cited by

CN103766231A; CN103989443A; CN106235974A

Designated contracting state (EPC)

DE FR GB

Designated extension state (EPC)

AL BA MK RS

DOCDB simple family (publication)

**EP 2045624 A1 20090408**; US 2009088900 A1 20090402

DOCDB simple family (application)

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